RABINOVICH, S. V

RABINOVICH, S.V., kand. tekhn. nauk.

Using the method of limit equilibrium in bending and stretching for graphoanalytic structural design. Vest. mash. 38 no.2:19-22 F '58.
(Machinery--Design--Graphic methods)   (MIRA 11:1)

LELEYEV, Nikolay Stepanovich; RABINOVICH, S.V., red.; BORUNOV, N.I.,
tekhn.red.

[Calculation and design of boiler unit frameworks] Raschet i
konstruirovanie karkasov kotloagregatov. Moskva, Gos.energ.
izd-vo, 1960. 222 p.   (MIRA 13:12)
(Boilers)

KRAVCHENKO, Petr Yefimovich, kand.tekhn.nauk; MILOVIDOV, S.S., prof.,
       retsenzent; ITSKOVICH, G.M., inzh., retsenzent; RABINOVICH, S.V.,
       red.; ANOSHINA, K.I., red.izd-va; SHLYK, M.D., tekhn.red.

[Fatigue strength] Ustalostnaia prochnost'. Moskva, Gos.izd-vo
"Vysshnia shkola," 1960. 103 p.   (MIRA 13:5)
              (Metals--Fatigue)

ITSKOVICH, Georgiy Meyerovich; MAKUSHIN, V.M., dotsent, kand.tekhn.nauk, retsenzent; LYZHENKOV, A.A., inzh., retsenzent; RABINOVICH, S.V., dotsent, kand.tekhn.nauk, nauchnyy red.; LIPKIN, T.G., red.izd-va; YEZHOVA, L.L., tekhn.red.

[Strength of materials] Soprotivlenie materialov. Moskva, Gos. izd-vo "Vysshaia shkola," 1960. 529 p.   (MIRA 14:3)

(Strength of materials)

ARTEMOV, Pavel Yakovlevich; TATUR, G.K., prof., doktor tekhn. nauk, retsenzent; RABINOVICH, S.V., dots., kand. tekhn. nauk, nauchn. red.

[Manual on the solution of problems concerning the determination and calculation of statically indeterminate bar systems] Rukovodstvo k resheniiu zadach po opredeleniiu peremeshchenii i raschetu staticheski neopredelimykh sterzhnevykh sistem. Minsk, Vysshaia shkola. 1964.
132 p.
(MIRA 17:11)

RABINOVICH, S.V.

Some data on the baking evaluation of winter wheat in the Ukraine.
Sbor. trud. asp. i mol. nauch. sotr. VIR no.5:43-51 '64.
(MIRA 18:3)

GORELOV, Leonid Konstantinovich; RABINOVICH, S.V., kand. tekhn. nauk, dots., otv. red.

[Geometrical characteristics of plane cross sections: Theory and problems; a methodological manual on the strength of materials] Geometricheskie kharakteristiki ploskikh sechenii: Teoriia i zadachi; uchebno-metodicheskoe posobie po soprotivleniiu materialov. Moskva, Mosk. stankoinstrumental'nyy in-t, 1964. 36 p. (MIRA 18:6)

RABINOVICH, S.V., kand.tekhn.nauk

Using the methods of Mohr and multiplication of moment factors in determining displacements in beams with stepwise varying cross section. Rasch.na prochn. no.11: 149-157 '65.

(MIRA 19:1)

SHUTSKAYA, Ye.I., kand. med. nauk; Prinimali uchastiye: RABINOVICH,
S.Ye., prof.; SLEPTSOVA, A.I., vrach; LIVEN, K.I., vrach;
SOKOLOVA, R.I., vrach; PEREL'MAN, R.M., vrach; AL'TMAN, I.M.,
vrach; SHEPILOV, N.S., kand. veterin. nauk; SVIRIDOV, A.A.

Epidemiological importance of tuberculosis in cattle.
Veterinariia 40 no.10:19-20 O'63.   (MIRA 17:5)

1. Novosibirskiy nauchno-issledovatel'skiy institut tuberkuleza
(all except Shepilov, Sviridov).

GLEYBERMAN, B.Ya., inzhener; RABINOVICH, S.Yu.

Erecting steel elements of the No.12 blast furnace in Dnepro-dzerzhinsk. Stroi.prom. 34 no.10:11-15 O '56.   (MLRA 9:12)

1. Trest Dneprostal'konstruktsiya.
   (Dnepredzerzhinsk--Blast furnaces)

KABANOV, Ivan Andreyevich; RABINOVICH, Sergey Yul'yevich; SAKHNOVSKIY, Mikhail Mikhaylovich; TITOV, Aleksandr Mikhaylovich; SURYGINA, B., tekhn.red.

[New processes for the manufacture and assembly of sheet-metal elements of blast furnaces] Novaia tekhnologiia izgotovleniia i montazha listovykh konstruktsii domennoi pechi; iz opyta orga- nizatsii "Ukrglavstal'konstruktsii" Ministerstva stroitel'stva USSR. Kiev, Gos.izd-vo lit-ry po stroit. i arkhit. USSR, 1960.
39 p.
(MIRA 14:1)

(Blast furnaces--Design and construction)
(Sheet-metal work)

LEBEDEV, B.F.; FED'KO, I.V.; AVRAMENKO, V.I.; RABINOVICH, S.Yu.

Mechanization of welding operations in building blast
furnaces in the Ukraine. Avtom. svar. 14 no.2:77-85 F '61.
                                        (MIRA 14:1)

1. Institut elektrosvarki imeni Ia.O. Patona AN USSR (for
Lebedev, Fed'ko, Avramenko). 2. Trest "Dneprostal'konstruktsiya"
(for Rabinovich).
                    (Ukraine--Electric welding)
            (Blast furnaces--Design and construction)

BOGDANOV, N.I., inzh.; RABINOVICH, S.Yu., inzh.; SMYKURZHEVSKIY, ▮.G., inzh.
    TARUSHKIN, P.A., inzh.

Assembling elements of the complex of buildings of Southern
Stone Concentration Combine No. 2. Prom. stroi. 39 no.11:25-
29 '61.   (MIRA 14:12)
                    (Stone industry)
                    (Krivoy rog—Construction industry)

RABINOVICH, S.Yu., inzh.; TARUSHKIN, P.A., inzh.

Overall mechanization of the assembly of the precast elements
of an open-hearth plant. Mekh. stroi. 19 no.10:5-8 O '62.
                                              (MIRA 15:12)
            (Iron and steel plants)

RABINOVICH, S.Yu., inzh.; TARUSHKIN, P.A., inzh.

Erection of the steel sections of a transporter bridge. Shakht.
stroi. 7 no.10:16-20 O '63.

(MIRA 16:10)

1. Trest Dneprostal'konstruktsiya.

TARNOPOL'SKIY, A.A., inzh.; SHKLOVSKIY, Ye.I., inzh.; TYULENEV, S.D.,
      inzh.; GUREVICH, E.I., inzh.; RABINOVICH, S.Yu., inzh.;
      DRYAPACHENKO, B.G., inzh.; SMORODA, I.M., inzh.

Investigation of deformations in the jacket of blast furnaces
during their erection by protrusion. Prom. stroi. 42 no. 6:
9-12 '65.   (MIRA 18:12)

⊃(6)

AUTHOR: Rabinovich, S.Z., Technician

TITLE: Operating PS-10 Drives With Alternating Current   SOV/⟨1-59-9-17/33

PERIODICAL: Energetik, 1959, Nr 9, pp 24-26   (USSR)

ABSTRACT: The author describes the modifications of PS-10 dri-
              ves used for the remote control of 6 kv electric mo-
              tors in an isolated pumping station of an unidentified
              power plant. The pumping station was equipped with
              KAM drives which may not be used for remote controls.
              As shown in Figure 1, a selenium rectifier is used
              for feeding the PS-10 drive. The rectifier receives
              power from a 180 kva, 6000/380/220 volt transformer.
              A second ac coil was added to the factory-made dc
              coil as shown in Figure 2. In this way, the PS-10
              drive has two coils, one for disconnecting the drive
              in case the ground protector is actuated, and for
              switching off in case of interphase short circuit.
              The author conducted tests for explaining the mini-
              mum primary current required for disconnecting the
              drive, according to the circuit diagram in Figure 3.

Card 1/2

SOV/61-59-9-17/33

Operating PS-10 Drives With Alternating Current

In case of short circuit between phases A-B or B-C
the minimum current for relay operation will be 400
amps. The disconnecting current during short circuits
between phases A-C is 20 amps. The modified PS-10
drive functioned during two years without failure.
There are 3 circuit diagrams.

Card 2/2

KHUMREVICH, I.N.

DIRBANDIKER, M.O., kandidat meditsinskikh nauk; BAZULINA, T.N., ordinator; GEL'MAN, A.N., ordinator; SMITRIYEV, S.N., ordinator; RABINOVICH, T.H., ordinator; KUNDEL', L.M., ordinator

Therapy of psoriasis in the balneological department of the Korolenko Clinical hospital. Vest. ven. i derm. no.1:18-19 Ja-F '55. (MIRA 8:4)

1. Iz kozhnogo otdeleniya (zav.-K.A.Shmelev, konsul'tant - prof. A.I.Kartamyshev) Moskovskoy klinicheskoy kozno-venerologicheskoy bol'nitsy im. Korolenko (glav. vrach - zaslushennyy vrach RSFSR V.P.Nikolayev).
        (PSORIASIS, therapy
            balneother., results in Russia)
        (BALNEOLOGY
            balneother. of psoriasis, results in Russia)

RABINOVICH, TS.; FROLOV, I.

Practice work in industry by physics students of a pedagogical institute. Politekh.obuch. no.9:64-72 Ag '57.   (MIRA 10:9)

1. Ul'yanovskiy pedagogicheskiy institut.
   (Education, Cooperative) (Physics--Study and teaching)

RA IHOVIC , Ts. M.

Rabinovich, Ts. M. -- "The Formation of Basic Concepts of the Quantum Theory of Light in the Course on General Physics in the Pedagogical Insti- tute." Academy of Pedagogical Sciences RSFSR. Sci Res Inst of Teaching Methods. Moscow, 1956. (Disseration For the Degree of Candidate in Peda- gogical Sciences).

So: Knizhnaya Letopis', No. 11, 1956, pp 103-114

RABINOVICH, TS.M.

Evaluation of tests for the determination of body reactivity in
pulmonary tuberculosis. Azerb. med. zhur. no. 8:40-44 Ag '60.
(MIRA 13:8)

1. Iz Azerbaydzhanskogo nauchno-issledovatel'skogo instituta
tuberkuleza (direktor - kand.meditsinskikh nauk A.D. Murmamedov.
(TUBERCULOSIS)   (CONNECTIVE TISSUES)   (MEDICAL TESTS)

RABINOVICH, TS.M.

Comparative evaluation of certain features of the organism in
pulmonary tuberculosis; based on tata on the trypan blue skin
test, erythrocyte sedimentation reaction, and the determination
of lymphocytes and monocytes. Probl.tub. 38 no.4:77-82 '60.

(MIRA 14:5)

(TUBERCULOSIS) (BLOOD—SEDIMENTATION) (LEUKOCYTES)

NURMAMEDOV, A.D., kand.med. nauk; RABINOVICH, TS.M.

Third Conference on Tuberculosis in the Azerbaijan S.S.R.
Probl. tub. 40 no.6:109-112 '62   (MIRA 16:12)

RABINOVICH, V., inzh.- ekonomist

Improving the method of operative planning of apartment-
house construction. Zhil. stroi. no.2:5-6 '64.

(MIRA 18:11)

RABINCVICH, V. A.

Chem Abs v48
1-25-54
general + Physical
Chemistry

Methods of determination of activity coefficients of components of solid solutions. V. A. Rabincvich. Uspekhi Khim. 21, 265–79(1952).—Review with 31 references.
G. M. Kosolapoff

8-31-54

RABINOVICH V.A.

USSR.

Determination of the activity coefficients of components in solid solutions by measuring the electromotive force. V. A. Rabinovich. *Uchenye Zapiski, Leningrad. Gosudarst. Univ. im. Zhdanova* No. 163, *Ser. Khim. Nauk* No. 12, 41–73(1953); cf. *C.A.* 49, 2810i.—The activity coeffs. of the components of the solid soln. AgCl-AgBr were detd. by a new exptl. method, developed earlier, based on the measurement of the e.m.f. A method is described for removing the O from the working soln. while measuring the e.m.f. The activity coeffs. were detd. at 25° over concn. ranges N_{AgBr} 1–0.83 and 0.1–0. $K_{equil.}$ was calcd. for the reaction $AgCl + HBr \rightleftharpoons AgBr + HCl$ for temp. 0–60°. Equations are given for the relation of $K_{equil.}$, ΔF, ΔH, and ΔS to temp. From these equations the values at 25° are given as: $\Delta F = -3487$ cal./mole, $\Delta H = -4497$ cal./mole, and $\Delta S = -3.4$ e.u.   J. Rovtar Leach

RABINOVICH, V.A.

Equation of state for deuterium. Inzh.-fiz.zhur. no.6:107-111
Je '60.

(MIRA 13:7)

1. Institut inzhenerov morskogo flota, g. Odessa.
 (Deuterium)   (Equation of state)

S/170/60/003/006/010/011
B013/B067

AUTHOR: Rabinovich, V. A.

TITLE: The Equation of State for Deuterium [?]

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 6,
               pp. 107 - 111

TEXT: An equation of state was deduced for deuterium on the basis of
the equation of state (1) $pv/RT_k = \alpha_0(\omega) + \alpha_1(\omega)\tau + \beta(\omega)\psi(\tau)$ for real
gases suggested by Ya. Z. Kazavchinskiy (Ref. 1). In this equation,
$\alpha_0(\omega)$, $\alpha_1(\omega)$, and $\beta(\omega)$ are elementary functions of the reduced density
$\omega = v_k/v$; $\psi(\tau)$ is a monotonically decreasing function of the reduced
temperature $\tau = T/T_k$. After substitution of the analytical formulas
(5), (7), (8), (9) derived here for α_0, α_1, β, and ψ into equation (1),
the result is examined (Tables 1-3). Table 1 shows that the mean error
on all isothermal lines does not exceed 0.4%. The values of the internal
energy given in Table 2 are in good agreement with the results obtained

Card 1/2

The Equation of State for Deuterium   S/170/60/003/006/010/011
                                               B013/B067

by Michels (Ref. 3). Table 3 shows that the equation of state suggested
for deuterium is consistent with the experimental data on compressibili-
ty in a wide temperature range. The above-mentioned equation of state
may be used for calculating detailed tables of the thermodynamic proper-
ties of deuterium. By means of the values calculated from the equation
suggested, state diagrams which are widely used for technical calcula-
tions can be set up in I-S and T-S coordinates. There are 3 tables and
7 references: 4 Soviet.

ASSOCIATION: Institut inzhenerov morskogo flota, g.Odessa (Institute
              of Naval Engineers, Odessa)

Card 2/2

RABINOVICH, V.A.; NIKEROV, A.E.; ROTSHTEYN, V.P.; SOKOLOV, P.N.

Determining the thermodynamic activities of single ions. Vest. LGU
15 no.4:101-105 '60.   (MIRA 13:2)
              (Ions) (Activity coefficients)

88267

S/170/61/004/001/005/020
B019/B056

11, 1230
11, 3400

AUTHORS: Rabinovich, V. A. and Tseyman, G. I.

TITLE: Equation of State and Thermodynamic Properties of Liquid
             Ammonia

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 1,
             pp. 31-36

TEXT: In the introduction the difficulties in setting up the equation of
state for liquid ammonia are discussed and, proceeding from the well-known
thermodynamic relation

$$(\partial c_v/\partial v)_T = T(\partial^2 p/\partial T^2)_v \qquad (2),$$

the equation of state

$$p = A(v) + B(v)T + \int (\partial p/\partial v)(dT/T)\, dT \qquad (3)$$

is obtained. As follows from the results obtained by Keyes (Ref. 1)
mentioned in a diagram, the isochores of liquid ammonia may be well
approximated by means of the equation $p = A_v + B_v T$ (4) with

$v = 1.6 - 2.4$ l/kg and $t = 30 - 180°C$, if $A_v = 412.9 - 11089v^{-1.682}$; (5)

Card 1/2

88267

Equation of State and Thermodynamic
Properties of Liquid Ammonia

S/170/61/004/001/005/020
5019/B056

$B_v = 2.6876 + 77.827v^{-3.706} + \Delta B$. On the basis of (4), the specific volumina on the saturation curve are calculated, and a comparison with data by R. Plank (Ref. 7) shows nearly complete agreement. Furthermore, on the basis of (4), the integral equation

$$i = i_f - A \int_{v_f}^{v} A_v dv + A(pv - p_f v_f) \qquad (7) \text{ for the enthalpy,}$$

and the integral equation $S = S_f + \int_{v_f}^{v} B_v dv \qquad (8)$ for the entropy is

obtained. A comparison with experimental data again shows good agreement. The formulas given here permit a calculation of the thermodynamic properties of liquid ammonia in the temperature range of 30 - 180°C at pressures of 1 - 500 kg/cm^2. There are 3 figures, 3 tables, and 10 references: 2 Soviet, 6 US, 1 British, and 1 German.

ASSOCIATION: Tsentral'noye proyektno-konstruktorskoye byuro No 3,
g. Odessa (Central Project-Constructing Office No. 3,
Odessa). Institut inzhenerov Morskogo flota, g. Odessa
(Institute for Naval Engineers, Odessa)
SUBMITTED: April 18, 1960
Card 2/2

RABINOVICH, V.A.

Equation of the state of liquid hydrogen. Izv. vys. ucheb.
zav.; neft' i gaz 4 no.9:97-100 '61.   (MIRA 14:12)

1. Odesskiy institut inzhenerov morskogo flota.
                    (Hydrogen)

29991

S/170/61/000/012/001/011
B125/B138

$5.4300 (1273)$

AUTHORS: Kazavchinskiy, Ya. Z., Kessel'man, P. M., Rabinovich, V. A.

TITLE: The second virial coefficient and its extrapolation for
              high temperatures

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, no. 12, 1961, 16-21

TEXT: The present paper deals with the extrapolation of the second virial
coefficient well above a temperature range of interest to experiments using
the Lennard-Jones potential. From the second virial coefficient

$$B = 2\pi N \int_0^\infty (1 - e^{-U/kT}) r^2 dr$$ and from the Lennard-Jones potential

$U(r) = 4U_0 \left[(r_0/r)^{12} - (r_0/r)^6 \right]$ it follows that $B = (2/3)\pi N r_0^3 F(z)$ or

$B = b_0 F(z)$, (5), for $z = kT/U_0$; $b_0 = (2/3)\pi N_0^3$. N = Avogadro number,

k = Boltzmann constant, $U = U(r)$ = potential energy of interaction between
two molecules at a distance r, U_0 = minimum potential energy, r_0 = distance
where $U = U_0$. Eq. (5) can be written as $\log B = \log b_0 + \log F$ (6) and
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S/170/61/000/012/001/011

The second virial coefficient ...   B125/B138

$\log z = \log (k/U_o) + \log T$ (7). The conformity of curves (6) and (7) confirms the accuracy of Eq. (5) and makes it possible to calculate the potential parameters for a substance to be studied. b_o and k/U_o can be used to calculate B for high temperatures with the help of Eq. (5). The method described furnishes results for monatomic gases, which agree well with theoretical and experimental values of the second virial coefficient. Eq. (5) describes experimental data for the second virial coefficient of polyatomic gases unsatisfactorily. The Lennard-Jones potential, therefore is also unable to describe complex molecular structures satisfactorily. By translating and rotating the coordinate system used for the experimental curve of the second virial coefficient it is possible to obtain conformity of the coordinates $\log B$, $\log T$, or $\log |F|$, $\log z$, which represent values of the experimental and theoretical curves. The usefulness of this method has been checked with N_2, H_2, D_2, O_2, CO, air, CO_2, and CF_4. The temperature dependence of the potential parameters U_o and b_o has to be taken into account for complex molecular structures. If $U_o = U_o(T)$ and $b_o = b_o(T)$ are known, it will be possible to calculate the values of the second virial

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The second virial coefficient ...

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B125/B138

coefficient from Eq. (5) even for a temperature range where experimental data are not available. A graphic extrapolation of the theoretical curve was found to be easiest. The second virial coefficient, which has been determined by this method for a wide temperature range, agrees well with corresponding experimental data. The values of the second virial coefficient calculated by a method of T. J. Kihara (Amer. Phys. Soc., 25, 4, 831, 1953), are significantly larger above 400°C than corresponding experimental results. The minimum of the curve $U_o k = f(\log T)$ always corresponds to the Boyle temperature of the substance in question. There are 4 figures, 1 table, and 7 references: 1 Soviet and 6 non-Soviet. The three most recent references to English-language publications read as follows: Hirschfelder J. O., Bird R. B., Spotr E. L. Trans. Amer. Soc. Mech. Eng., 71, 921, 1949; Kihara T. J. Amer. Phys. Soc., 25, 4, 831, 1953; MacCormack K. E., Schneider W. G. J. Chem. Phys., 18, 1950.

ASSOCIATION: Institut inzhenerov morskogo flota, g. Odessa (Institute of the Engineers of the Merchant-navy, Odessa)

SUBMITTED: April 19, 1961

Card 3/3

//. 3110
//. 1230

S/152/62/000/003/002/002
B126/B101

AUTHOR: Rabinovich, V. A.

TITLE: Caloric properties of liquid hydrogen

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Neft' i gaz, no. 3,
1962, 91-93

TEXT: The enthalpy and entropy were calculated, in combination with thermodynamic correlations, on the basis of the following equations of state of liquid hydrogen:

$$i = i' - A \int_{v'}^{v} M dv + A(pv + p_s v').$$ (1)

$$S = S' + A \int_{v'}^{v} N dv$$ (2)

where M and N = function of specific volumes

Card 1/8

Caloric properties of liquid hydrogen

S/152/62/000/003/002/002
B126/B101

i' and S' = enthalpy and entropy on the saturation level
of the liquid

p = pressure

v = specific volume

A = thermic equivalent of work

By this method only the change of enthalpy and entropy for each
calculated isotherm can be determined. To obtain complete values the
data of the saturation level i' and s' must be available which is the
case if the entropy and enthalpy of gas and the values of heat evaporation
on all calculated isotherms are known. The Clausius-Clapeyron equation
was used to determine the latter values. The values of enthalpy and
entropy of liquid hydrogen calculated by the above method are shown in
tables 2 and 3. Comparison of the calculated and experimental values
was not possible for lack of the latter; however a test made with liquid
ammonia showed that the calculated caloric values are sufficiently
reliable if the experimental thermic data are satisfactory. There are
Card 2/3

Caloric properties of liquid hydrogen

S/152/62/000/003/002/002
B126/B101

3 tables and 6 references: 2 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: Cornish R. E. and Eastman E. D. J. Amer. Chem. Soc. v. 50, 1928, p. 627. White D., Friedman A. S. and Johnston H. L. J. Amer. Chem. Soc., 72, 1950, 3972.

ASSOCIATION: Odesskiy institut inzhenerov morskogo flota
              (Odessa Institute of Engineers of the Maritime Fleet)

SUBMITTED: August 12, 1961

Table 2: Enthalpy of liquid hydrogen i, kcal/kg

Table 3: Entropy of liquid hydrogen s, kcal/kg·degree

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S/170/62/005/005/004/015
B104/B102

AUTHOR: Rabinovich, V. A.

TITLE: An analysis of experimental thermal quantities and the
equation of state of hydrogen

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 5, 1962, 30-37

TEXT: On the basis of data obtained by a number of investigators the
hydrogen equation of state given by Ya. Z. Kazavchinskiy (Teploenergetika,
no. 7, 1958) is represented in the form

$$z = 0{,}48374\,\omega + 0{,}95074\,\omega^2 - 0{,}90968\,\omega^3 + 0{,}91770\,\omega^4 - 0{,}19778\,\omega^5 +$$

$$+ (1 + 0{,}23510\,\omega + 0{,}01394\,\omega^2 + 0{,}07029\,\omega^3 - 0{,}05824\,\omega^4 + 0{,}01273\,\omega^5)\,\tau +$$

$$+ (- 1{,}90330\,\omega - 0{,}77848\,\omega^2 + 0{,}71110\,\omega^3 - 0{,}66808\,\omega^4 + 0{,}09700\,\omega^5 +$$

$$+ 0{,}02043\,\omega^6)\,\exp(- 0{,}127\,\tau) + (- 0{,}65566\,\omega - 0{,}14624\,\omega^2 + 3{,}27170\,\omega^3 -$$

$$- 3{,}44870\,\omega^4 + 1{,}18672\,\omega^5 - 0{,}12090\,\omega^6)\,\exp(- 1{,}905\,\tau). \qquad (6)$$

Card 1/2

An analysis of experimental ...

S/170/62/005/005/004/015
B104/B102

where $\sigma = pv/RT_c$, $\omega = v_c/v$, $\tau = T/T_c$. At $T > T_B$ (T_B – Boyle temperature) this equation holds for $\omega = 0\text{-}2.4$ (up to 3000 kg/cm^2); at $T < T_B$ it holds for $0 < \omega < 1$. Over the entire temperature range the experimental and theoretical results are in good agreement. This equation of state is extended to higher temperatures ($> 600°C$) by extrapolating the second and third virial coefficients. Thermodynamic quantities of hydrogen are calculated for temperatures between -253 and $4000°C$ and pressures between 0 and 500 kg/cm^2. Dissociation is ignored; an i-s diagram is constructed. There are 2 tables and 3 figures.

ASSOCIATION: Institut inzhenerov morskogo flota, g. Odessa
(Institute of Engineers of Maritime Fleet, Odessa)

SUBMITTED: June 19, 1961

Card 2/2

RABINOVICH, V. A. (Odessa institute of engineers of naval fleet)

"A method of computing thermodynamic properties of hydrogen at high temperatures."

Report presented at the Section on Thermal-physical Properties and Non-stationary Thermal Capacity, Scientific Session, Council of Acad. Sci. Ukr SSR on High Temperature Physics, Kiev, 2-4 Apr 1963.

Reported in Teplofizika Vysokikh temperatur, No. 2, Sep-Oct 1963, p. 321, JPRS 24,651. 19 May 1964.

L 13149-63   EWT(1)/EPF(n)-2/EWP(q)/EWT(m)/BDS   AFFTC/ASD/SSD   Pu-4
JD/JW   S/170/63/000/004/016/017
                                                                    63

AUTHOR: . Rabinovich, V. A.

TITLE: Calculation of thermodynamic properties of deuterium

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 4, 1963, 118-122

TEXT: The author considers the laws governing the thermodynamic behavior
of hydrogen and deuterium which render possible the use of the equation of state
of gaseous hydrogen for calculating the thermodynamic properties of deuterium.
The results of the calculations are compared with the available experimental data.
Curves are presented for experimental isotherms.

ASSOCIATION: Institut inzhenerov morskogo flota (Odessa) (Institute of Maritime
              Fleet Engineers)

SUBMITTED: Feb 28, 63

Card 1/1

L 17163-63   EPF(c)/EWT(1)/EPF(n)-2/EWP(q)/EWT(m)/BDS   AFFTC/ASD/

SSD   Pr-4/Pu-4   JD

ACCESSION NR: AP3004293   S/0170/63/006/007/0043/0049

AUTHOR: Kessel'man, P. M., Rabinovich, V. A.

TITLE: Thermodynamic properties of disssociated hydrogen and oxygen

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 7, 1963, 43-49

TOPIC TAGS: thermodynamic property, dissociated hydrogen, dissociated oxygen, specific volume, enthalpy, entropy, chemical equilibrium

ABSTRACT: The article uses the theory of chemical equilibrium to determine the balanced compositions of mixtures formed in the dissociation of hydrogen and oxygen. It calculates the thermodynamic properties of dissociated H_2 and O_2 at 2000-4000C and 2000-3000C, respectively, and pressures of $(1-500)10^5$ n/cu m. Two papers by the authors in IFZh No. 5, 1963, gave the equations for the state of molecular hydrogen and oxygen (without consideration of dissociation) at 4000 and 3000C, respectively, and pressures up to $5 \cdot 10^7$ n/cu m. The detailed thermodynamic tables of specific volume, enthalpy and entropy of H_2 and O_2

Card 1/3

L 17163-63

ACCESSION NR: AP3004293

calculated by those equations were the basis for calculating the properties of the substance studied with consideration of their <u>dissociation</u> at high temperatures. At temperatures above 2000C, at which there is already a perceptible dissociation, atomic hydrogen and oxygen can be regarded as practically ideal gases. By the theory of chemical equilibrium, $K_p = \frac{(1-x)^2}{x}p$,

where x is the mol content of undissociated mass in the mixture, and $K_p = \frac{K_{po}}{K_{gamma}}$,

where K_{gamma} is determined by the volatility data on each component, for which the article gives formulas. For mixtures of the type $A_2 + 2A$ (A = atom),

$K_{gamma} = \frac{gamma_A^2}{gamma_{A_2}}$, where the coefficient of activity gamma = f/p. Thus, to

determine the K_p of hydrogen and oxygen dissociation reactions one has to know K_{po} in dependence upon the temperature for each of the substances studied, as

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L 17163-63

ACCESSION NR: AP3004293

well as the volatilities of H_2 and O_2, which are found from the equations of state for those components. The authors regard as justified the application of Amag's law for calculating the properties of a mixture by the equation $V_{mix} = V_1 x + V_2 (1 - x)$, at the same pressure and temperature. On the basis of this and the relationships between thermal and caloric values, the following formulas for the calculation of enthalp and entropy are obtained:

$$J_{mix} = J_1 x + J_2 (1 - x),$$

$$S_{mix} = S_1 x + S_2 (1 - x) - AR \quad [x \ln x + (1 - x) \ln (1 - x)],$$

Table 1 gives mol content of molecular H and O in a reacting mixture (balanced composition) at 11 temperatures between 2000 and 3000 C; table 2, the specific volumes and enthalpies of dissociated H and O at the same temperatures. Orig. has 2 tables and 15 numbered equations.

ASSOCIATION: Institut inzhenerov morskogo flota, Odessa (Institute of Naval Engineers)

SUBMITTED: 17Jan63   DATE ACQ: 08Aug63   ENCL: 00
SUB CODE: PH   NO REF SOV: 003   OTHER: 010

Card 3/3

VASSERMAN, A. A.; RABINOVICH, V. A.

"Calculation of the viscosity and the thermal conductivity of air and its components for wide range of parameters."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Odessa Inst of Naval Engineers.

L 27867-65   EWT(1)/EWT(m)/EPF(c)/EPR/EWP(t)/EWP(b)   Pr-4/Pe-4   IJP(c)/RPL
                        JD/WW/JW/GS   S/0000/64/000/000/0258/0263

ACCESSION NR: AT5004232

AUTHOR: Rabinovich, V. A.

TITLE: Thermodynamic properties of hydrogen at high temperatures

SOURCE: AN UkrSSR. Institut tekhnicheskoy teplofiziki. Teplofizika i teplotekh-
nika (Thermophysics and heat engineering). Kiev, Naukova dumka, 1964, 258-263

TOPIC TAGS: hydrogen, thermodynamic property, high temperature research,
specific heat, dissociation, second order phase transition, Lennard Jones
potential

ABSTRACT: This is a continuation of an earlier paper by the author (IFZh, V, no.
5, 1962) in which an equation of state was derived for gaseous hydrogen and its
thermodynamic properties tabulated up to 400C and 500 bar. In the present article
the second virial coefficient, which makes the greatest contribution to the equa-
tion of state, is extrapolated to higher temperatures, using the Kihara model and
the intermolecular interaction potentials of Lennard-Jones and Buckingham. Tabu-
lation and comparison of the calculations with the different potentials show
that the earlier formula can be successfully extrapolated to temperatures up to

Card 1/2

L 27867-65

ACCESSION NR: AT5004232   2

4000C (at 500 bar) if no account of dissociation is taken. The dissociation of
hydrogen is discussed from the point of view of similarity between chemical re-
actions and phase transformations, and the behavior of the specific heat of hydro-
gen in the supercritical region is explained on the basis of the processes that
occur in chemical dissociation. Arguments are advanced in favor of the original
assumption of Ya. I. Frenkel' that the dissociation of hydrogen is a second-order
phase transition. Orig. art. has: 2 figures, 5 formulas, and 1 table.

ASSOCIATION: Odesskiy institut inzhenerov morskogo flota (Odessa Institute of
Naval Engineers)

SUBMITTED: 10Aug64   ENCL: 00   SUB CODE: TD, IC

NR REF SOV: 005   .'ThER: 005

Card 2/2

ACCESSION NR: AP4038662   S/0170/64/000/004/0044/0050

AUTHOR: Vasserman, A. A.; Rabinovich, V. A.

TITLE: On the problem of calculating the viscosity of real gases

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 4, 1964, 44-50

TOPIC TAGS: Real gas viscosity, dynamic gas viscosity, gas viscosity calcula-
tion, air viscosity calculation, excess real gas viscosity

ABSTRACT: The article shows the desirability of using the equation of state of
a real gas represented by elementary functions for calculating the viscosity
over a wide range of parameter variations by means of an equation derived by
I. G. Golubov. An equation was formulated for the viscosity of air, and calcula-
tions were made for temperatures in the range of 0 to $1000^\circ C$ and pressures of
$(1-1000) \cdot 10^5$ n/m^2. Calculated and experimental data on the viscosity of air in
the range of 0 to $150^\circ C$ and values of the coefficient of dynamic viscosity of
air for the $0-1000^\circ C$ range are tabulated. Orig. art. has 2 figures, 5 formulas,
and 2 tables.

Card 1/2

ACCESSION NR: AP4038662

ASSOCIATION: Institut inzhenerov morskogo flota, Odessa (Institute of Naval Engineers)

SUBMITTED: 12Aug63   DATE ACQ: 19May64   ENCL: 00

SUB CODE: ME .   NO REF SOV: 006   OTHER: 003

Card 2/2

RABINOVICH, V.A., kand. tekhn. nauk

Thermal conductivity equation for water vapor.   Teploenergetika
11 no.5:74-78   My'64.   (MIRA 17:5)

1. Odesskiy institut inzhenerov morskogo flota.

L. 32008-66   EWT(l)/EWT(m)/T/EWP(l)/ETI   IJP(c)   JD_____
ACC NR: AP6014232
SOURCE CODE: UR/0115/66/000/003/0077/0080

AUTHOR: Vasserman, A. A.; Rabinovich, V. A.

ORG: none

TITLE: Thermodynamic properties of nitrogen up to 1300°K and 1000 bar

SOURCE: Izmeritel'naya tekhnika, no. 3, 1966, 77-80

TOPIC TAGS: thermodynamic property, enthalpy, entropy, nitrogen

ABSTRACT: Tables of the most important thermodynamic properties of nitrogen are dis-
cussed. On the basis of extensive references, tables of specific volume, enthalpy, en-
tropy and heat capacity covering temperature range from 250°K to 1300°K and pressure
range from 1.0 to 1000 bars, have been compiled. In addition, some computed values
are also given and their relationship to experimental data is discussed. Some of the
methods used in obtaining the values in the tables are discussed and error estimates
are made. On the basis of agreement between computed values and values measured by
many workers, the tables are recommended by the authors as sufficiently accurate for en-
gineering work in the relevant temperature and pressure ranges. Orig. art. has: 6
tables.

SUB CODE: 20/   ORIG REF: 006/   OTH REF: 018

SUBM DATE: none
UDC: 546.17(083.3)

Card 1/1

ACC NR: AT7000961   SOURCE CODE: UR/0000/66/000/000/0090/0097

AUTHOR: Vasserman, A. A.; Rabinovich, V. A.

ORG: Odessa Institute of Naval Engineers (Odesskiy Institut Inzhenerov Morskogo Flota)

TITLE: Thermal conductivity of air in the 0-1000°C interval and pressures below 400 bar

SOURCE: AN UkrSSR. Teplofizicheskiye svoystva veshchestv (Thermophysical properties of materials). Kiev, Izd-vo Naukova dumka, 1966, 90-97

TOPIC TAGS: heat transfer rate, heat conductivity, pressure effect, air

ABSTRACT: On the basis of the previously published data the article shows the calculations of the thermal conductivity of air up to 1000°C and 400 bar pressure. An equation which best describes the thermal conductivity of air as a function of pressure and temperature is as follows:

$$\lambda_{p,T} = \lambda_T + 263.8 \cdot 10^{-6} \exp\left(-\frac{1.55}{\varrho^{0.5}}\right) \quad [\text{kj/m} \cdot \text{sec} \cdot \text{deg}]$$

where $\lambda_{p,T}$ is the thermal conductivity as a function of temperature and pressure, λ_T

Card 1/2

ACC NR: AT7000961

is the thermal conductivity of air at pressure equal to one dyne/cm^2 and ρ is the density of air. In general the values of $\lambda_{p,T}$ calculated by means of this equation agree with the experimental values within ±2% and only along the 200°C isotherm and p = 300 bar does the maximum discrepancy reach -3.7%. On the basis of the relationship from the kinetic theory of gases which relates the thermal conductivity to viscosity and heat capacity at constant volume, the validity of thermal conductivity at higher pressures was verified. Due to the absence of experimental data, the calculations of thermal conductivity in air at elevated pressures in a negative temperature interval were not made in this work. Orig. art. has: 4 tables, 2 figures.

SUB CODE: 20/   SUBM DATE: 20Jul65/   ORIG REF: 007/   OTH REF: 005

Card 2/2

NIKOL'SKIY, B.P., glav. red.; GRIGOROV, O.N., doktor khim. nauk, red.;
PORAY-KOSHITS. B.A.,dok████████m. nauk, ███████████;
█████████████,.red.;ROMANKOV, P.G., red.; FRIDRIKHSBERG,
D.A., kand. khim. nauk, red.; RABINOVICH, V.A., kand. khim.
nauk, red.; RACHINSKIY, F.Yu., kand. khim. nauk, red.; ZAYDEL',
A.N., doktor fiz.-mat. nauk, red.; ZASLAVSKIY, A.I., kand.khim.
nauk, red.; MORACHEVSKIY, Yu.V., prof., red.; GRIVA, Z.I., red.;
KOTS, V.A., red.; TOMARCHENKO, S.L., red.

[Chemist's handbook] Spravochnik khimika. 2., izd., perer. i
dop. Moskva, Khimiia. Vol.4. 1965. 919 p.   (MIRA 19:1)

1. Chlen-korrespondent AN SSSR (for Nikol'skiy, Romankov).

ACC NR: AR7008654   SOURCE CODE: UR/0372/66/000/012/G042/G042

AUTHOR: Rabinovich, V. A.

TITLE: Optical coding methods

SOURCE: Ref. zh. Kibernetika, Abs. 12G275

REF SOURCE: Sb. 2-ya Vses. konferentsiya po teorii kodir. i yeye prilozh. Sekts. 5. Ch. 1. M., b. g. 35-45

TOPIC TAGS: signal coding, fiber optics communication, cyclic coding

ABSTRACT: The length of a strip is measured by projecting an image of the specimen on the input pupil of a fiber-optical device consisting of a bundle of light-conducting fibers arranged in a single line at the input pupil and in a rectangular or spiral raster at the output pupil. The two-dimensional quantized output image is scanned by a TV transmitting tube. The use of this device increases the resolution of the TV pickup and eliminates the effect which nonlinearity and instability in scanning have on the result of measurement. Logical scanning systems may be used to reduce redundancy in transmission of TV images. A practicable method of optical coding consists of coarse and fine quantization of input images with the use of two-line logical stepped scanning in which the size of the step in the frame is determined from the results of coarse quantization. In the coordination-code method, the TV pickup puts out

Card   1/2   UDC: 62-506:621.391.152

ACC NR: AR7008654

a digital signal which corresponds to the result of measuring the coordinates of the edges of the specimen. High efficiency may be achieved without using logical scanning by space filtration of a suitable image with successive isolation of the image elements. The position of the elements is coded by using a fiber-optical device consisting of fibers arranged in a rectangular matrix at the input pupil and thinned out according to binary Gray code at the output pupil. Bibliography of 11 titles. Ye. Sh. [Translation of abstract]

SUB CODE: 17/

Card   2/2

RABINOVICH, V. A

USSR

A new method for determining the activity coefficients in solid solutions. B. P. Nikol'skii and V. A. Rabinovich. (A. A. Zhdanov State Univ., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 73, 319-22(1951).—Equations were developed that make possible the detn. of the activity of the components of a AgBr-AgCl solid soln. by measuring the e.m.f. of the galvanic cell H₂|HCl(mₐcₗ), HBr(mₕₐᵣ)| AgBr-AgCl₍ₛₒₗᵢ𝒹 ₛₒₗₙ₎-Ag, providing the activities of HCl and HBr in the liquid phase are known. The activity coeffs. were detd. at 25° over a concn. range of N_{AgBr} 0-0.1 and 0.83-1.0. This method can be applied to solid solns. having a common anion also. I. Rovtar Reach

RABINOVICH, V. A.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Electrochemistry

The application of platinized glass electrodes for determining the oxidation-reduction potentials in field soils. V. A. Rabinovich and O. V. Kurovskaya. *Pochvovedenie* 1953, No. 4, 78-80.—A modification of the Zakhar'evskii method (*C.A.* 38, 1691⁹) of prepg. metallised glass electrodes is given. A soln. of rosin (colophony) in turpentine is prepd. in the ratio of 1:1. Upon cooling, the oily brown liquid is mixed with an equal amount of alc.; 1 g. of H_2PtCl_6 is dissolved in 12 ml. alc. and to it a similar amt. of a satd. alc. H_3BO_3 soln. is added. This combined soln. is mixed with 25 ml. of the rosin soln. One end (1-2 cm.) of the glass tube to be platinised (about 5 mm. in diam.) is immersed into the liquid and then heated first in a smoky flame followed by a blue flame, when a shiny layer of Pt is noted, and continued until all the Pt in the tube is reduced, i.e. after turning from black to gray. The tube is dipped again in the rosin-soln. mixt. and heated again. This is repeated 2-3 times until a layer of Pt is obtained. The end of the tube is then sealed and filled with Hg. A graphic illustration of this electrode is given. It is claimed that 1 g. of H_2PtCl_6 may give as many as 200 electrodes. These electrodes can readily be used with great accuracy in the field.

J. S. Joffe

Rabinovich, V. A.

USSR/Agriculture - Soil science

Card 1/1   Pub. 22 - 36/45

Authors   : Rabinovich, V. A.

Title   : Relation between the oxidizing potential of the soil and the activity
               of soil microflora

Periodical   : Dok. AN SSSR 103/2, 305-308, Jul 11, 1955

Abstract   : Scientific data are given on the relation existing between the oxidation
               potential of the soil and the activity of its microflora. Five USSR
               references (1937-1953). Table.

Institution : Leningrad Branch of the All-Union Inst. of Fert, Agr. Eng. and Soil Sc.

Presented by : Academician I. V. Tyurin, April 18, 1955

USSR/Soil Science - Physical and Chemical Properties of Soils.   J

Abs Jour : Ref Zhur Biol., No 22, 1958, 100019

Author   : Blagovidov, N.L., Rabinovich, V.A., Sell'-Bekman, I.Ya.
Inst   : -
Title   : Modification Character of the Oxidizing Potential on
             the Profile of Certain Soils of the Leningradskaya Oblast'

Orig Pub : Pochvovedeniye, 1957, No 6, 81-85

Abstract : With the aid of platinized glass electrodes, there were
             conducted measurements of the oxidizing potential (Eh)
             on the profile of a number of soils of the Leningradskaya
             Oblast'. It is shown that the general character of the
             Eh modification on the soil profile is a sufficiently
             reliable indication of the given soil's variety. Soils
             of a normal moisture are characterized by a maximum Eh
             in the lower part of the humus horizon, thereby connec-
             ting the change of the soil microflora's activity with
             depth; soils of excessive moisture are characterized by

Card 2/2

- 30 -

USSR/Soil Science - Physical and Chemical Properties of Soils.   J

Abs Jour   : Ref Zhur Biol., No 22, 1958, 100019

a minimum Eh in the lower part of the humus or in the
cleyey horizon, thereby connecting the change with ac-
cumulation of the products of reduction. At the plow-
ing of soils of normal moisture, the size of Eh decrea-
ses, while at the plowing of overmoistened soils it in-
creases. On dried-up soils, which were subjected previ-
ously to excessive moisture and which retained morpholo-
gical signs of cley formation, there may appear the spe-
cific for soils of normal moisture, maximum Eh in the
lower part of the humus horizon, thereby bearing witness
to the change of direction of the soil-formation process.
The form of the Eh profile curve may characterize the con-
temporary trend of the soil-formation process. -- V.A.
Rabinovich

Card 2/2

SELL'-BEKMAN, I.Ya.; RABINOVICH, V.A.; KUROVSKAYA, O.V.

Profiles of redox potentials in relation to soil formation conditions.
Pochvovedenie no.6:66-70 Je '60.   (MIRA 13:11)

1. Severo-zapadnyy nauchno-issledovatel'skiy institut sel'skogo
khozyaystva.
                        (Soil formation)
              (Oxidation-reduction reaction)

RABINOVICH, V.A.; KUROVSKAYA, O.V.

Complexometrical determination of exchangeable calcium and magnesium in soils. Pochvovedenie no.10:97-99 O '61.
(MIRA 14:9)

1. Severo-Zapadnyy nauchno-issledovatel'skiy institut sel'skogo khozyaystva.
(Soils—Magnesium content)
(Soils—Calcium content)

ZAKHAR'YEVSKIY, M.S.; RABINOVICH, V.A.

Thin-layer electrodes. Zav.lab. 27 no.9:1158-1159 '61. (MIRA 14:9)

1. Leningradskiy gosudarstvennyy universitet imeni A.A.
Zhdanova.

(Electrodes, Platinum)

RABINOVICH, V.A.

Electromotive force of a reversible galvanic cell and
the thermodynamic activity of separate ions in relation
to the concept of the compensating effect. Zhur. fiz.
khim. 38 no.5:1331-1334 My '64.   (MIRA 18:12)

1. Leningradskiy nauchno-issledovatel'skiy institut
sel'skogo khozyaystva.

L 23070-66   EWT(d)/FSS-2/EWP(v)/EWP(k)/EWP(h)/EWP(1)

ACC NR: AP6011241   SOURCE CODE: UR/0413/66/000/006/0079/0079

INVENTOR: Mamkin, V. M.; Rabinovich, V. A.; Zatoka, L..I.; Sharf, Ye. M.

ORG: none

TITLE: Digital television pickup of the linear dimensions and the position of luminous objects. Class 42, No. 179937 [announced by the Scientific Research Institute of Heavy Machine Building (Nauchno-issledovatel'skiy institut tyazhelogo mashinostroyeniya)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 79

TOPIC TAGS: TV recorder, measuring instrument, optic measurement, visual signal, remote control, automatic control

ABSTRACT: An Author Certificate has been issued for a digital television pickup of the linear dimensions and the position of luminous objects, e.g., hot-rolled iron. The pickup contains fiber-optical light guides, a television tube, and a light-guide logical scanner. To increase the speed of response and eliminate errors due to the entrance of foreign objects onto the field of vision, the logical scanner is constructed in such a way that higher-order numerical quantities are read out before those of a lower order. This is achieved by beam deflection of the pickup tube - at first in the vertical direction and then after the appearance of the first darkened light guide in the horizontal direction. Orig. art. has: 1 figure.   [KM]

SUB CODE: 09/ . SUBM DATE: 05Nov64/ ATD PRESS: 4234
Card   1/1

L 20413-66   EWT(1)/T/EWA(h)   IJP(c)

ACC NR: AP6009892   SOURCE CODE: UR/0413/66/000/004/0084/0085

AUTHOR: Rabinovich, V. A.

ORG: none

TITLE: Fiber-optic digital position detector. Class 42, No. 179030

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
no. 4, 1966, 84-85

TOPIC TAGS: optic detection, computer component, fiber optic component,
fiber optics

ABSTRACT: The proposed digital position detector employs a fiber-optic
matrix. For enhanced speed and accuracy, the ends of the matrix light
conductors are binary coded. A diagram is shown in the figure. Orig.
art. has: 1 figure.   [DW]

UDC: 535.8:666.1.036.9
      681.2.083.8

Card 1/2

L 20413-66

ACC NR: AP6009892
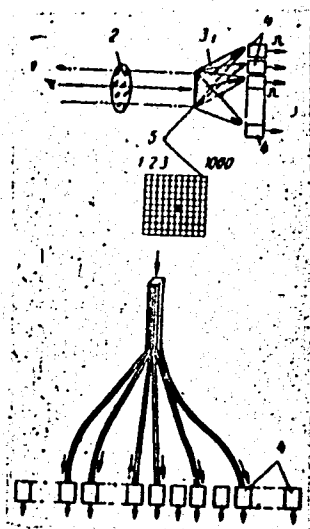
Fig. 1. Fiber-optic position detector

1 - Luminous target; 2 - objective;
3 - coding unit; 4 - photodetectors;
5 - rectangular screen.

SUB CODE: 09/ SUBM DATE: 06Nov64/ ATD PRESS: 4222

Card 2/2 BK

RABINOVICH, V. A.

USSR/Miscellaneous - Frequency measurement

Card 1/1   : Pub. 133 - 17/20

Authors   : Rabinovich, V. A., Engineer

Title   : Frequency deviations measured by the phase displacement compensation
               method

Periodical   : Vest. svyazi 7, 29-30, July 1954

Abstract   : A method of measuring frequency deviations, based on the utilization of
               phase characteristics of channel band filters, is described. The idea of
               this method is explained. In addition to a much simplified measuring
               process this method offers greater accuracy than the known zero pulsation
               and ellipse methods. The principle measuring scheme is presented. Draw-
               ings.

Institution : ....

Submitted   : ....

RABINOVICH, V. A.

7598   RABINOVICH, V. A. Televidenie i fotosvyaz' Programma dlya tekhnikumov
svyai. Spetsial'nost' & Radiosvyaz' i radioveshchaniye & Radiofikatsiya
(Utv. 16/XII 1953 g) M., Svyaz'izdat, 1955. 8 s. 20 sm. (M-vo svyazi
SSSR. Glav. ulr. ucheb. zavedeniyami) 1.000 ekz. Bespi - V kontse teksta
sost: V. A. Rabinovich
(55-3880)

SO: Knizhnaya LeTopis, Vol. 7, 1955

RABINOVICH, V.

Plano drills. Tekh.mol. 25 no.8:26 Ag '57.   (MLRA 10:9)
(Boring machinery)

Rabinovich, V.

107-58-5-21/32

AUTHOR: Rabinovich, V. (Sverdlovsk)

TITLE: Television in Metallurgy (Televideniye v metallurgii)

PERIODICAL: Radio, 1958, Nr 5, pp 39 - 40 (USSR)

ABSTRACT: In 1957, the TV laboratory of the Sverdlovskiy radiotekhni-
             cheskiy tekhnikum (Sverdlovsk Radiotechnical School) developed
             for the "Uralmashzavod" an experimental industrial TV system
             for observing the casting of steel in a vacuum chamber. The
             "PTU-0" industrial TV system produced by the Soviet radio indus-
             try was not suitable for this purpose, chiefly because of the
             inertia of the vidicon pick-up tube and the lack of heat-
             resistance. Figure 1 shows a cross-section of the vacuum
             chamber. Tests conducted by the aforementioned laboratory
             showed the advantages of the superorthicon pick-up tube as
             compared to the vidicon and established the requirements for
             this special TV system. Experimental superorthicon and vidi-
             con TV cameras were built on the basis of the test results.
             Figure 4 shows the structure of a new pick-up tube. The lens
             system "Yupiter-9" was used. The housing of the camera is
             water-cooled and has a highly finished surface to reduce
             to a minimum the absorption of radiation heat. The lens

Card 1/2

107-58-5-21/32

Television in Metallurgy

system and the interior are cooled by streams of cold air.
The water-air cooling and the highly-polished surface permit
the placing of the camera in the vicinity of the mould. The
entire TV system for the "Uralmashzavod" consists of a camera,
a control instrument, a power feed block, and a commercial
TV receiver, as shown in figure 2. Experiments with the in-
dustrial TV system installed in the vacuum chamber are con-
tinuing. There are four figures.

AVAILABLE: Library of Congress

Card 2/2

AUTHOR: Rabinovich, V.A., Engineer   SOV/133-58-8-30/30

TITLE: Television in Metallurgy (Televideniye v metallurgii)

PERIODICAL: Stal', 1958, Nr 8, pp 766-767 (USSR)

ABSTRACT: In 1957, a television equipment was designed for the observation of a continuous casting in vacuo on the Uralmashzavod. During testing of the equipment, it was found to be unsuitable for the purpose. On the basis of the experience gained, a new television camera was designed (Figure 4) which is now being tested. There are 4 figures.

Card1/1   1. Television--Applications   2. Television cameras--Test results
            3. Metals--Casting

USCOMM-DC-55800

SOV/117-59-8-12/44

25(5) ·

AUTHORS: Broyde, M.Ya., Deputy Shop Superintendent; Rabinovich,
            V.A., Head of TV Laboratory

TITLE: The Television Control of the Vacuum Teeming of Steel

PERIODICAL: Mashinostroitel', 1959, Nr 8, pp 7-9 (USSR)

ABSTRACT: The Uralmashzavod was first in the USSR to introduce
            television observation of the vacuum teeming of
            steel. The television laboratory of the Sverdlovskiy
            radiotekhnicheskiy tekhnikum (Sverdlovsk Radiotechnical
            Technicum) developed and made for this purpose two
            commercial television sets with cameras having "vidikon"
            and "superortikon" types of tubes. In 1958, a new type
            of camera was developed. Its units are set in a verti-
            cal, "bookstand" order in a watertight cylindrical casing
            with forced air cooling. The cylindrical camera is 500
            mm in length, 150 mm in diameter, and weighs 12 kilo-
            grams. The "Molot 2" type of "vidicon" has proved most

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SOV/117-59-8-12/44

Television Control of the Vacuum Teeming of Steel

suitable at present. During the current seven years, the number of vacuum chambers for teeming at the plant will increase to five, and it is envisaged to mechanize the vacuum teeming of steel. For this purpose, a remote control system has been developed at the plant for controlling the ladle stoppers and for the television control of vacuum steel teeming. There is 1 diagram.

ASSOCIATIONS: Martenovskiy tsekh Uralmashzavoda (Open-Hearth shop of the Uralmashzavod) (Broyde). Laboratoriya televideniya Sverdlovskogo radiotekhnicheskogo tehnikuma imeni A. S. Popova (Television Laboratory of the Sverdlovsk Radio-technical Technicum imeni A.S. Popov) (Rabinovich).

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ACC NR: AM6036725   Monograph   UR/

Vasserman, Aleksandr Anatol'yevich; Kazavchinskiy, Yakov Zakharovich; Rabinovich, Viktor Abramovich

Thermophysical properties of air and its components (Teplofizicheskiye svoystva vozdukha i yego komponentov) Moscow. Izd-vo "Nauka". 1966. 374 p. biblio. , diagr. , (4 in pocket), tables. (At head of title: Akademiya nauk SSSR) Errata slip inserted. 3400 copies printed.

TOPIC TAGS: air, thermal property, thermodynamic analysis, thermodynamic function, power plant, gas property, gas dynamics, gas viscosity

PURPOSE AND COVERAGE: This book is intended for scientists, designers, engineers, technicians, and students engaged in research, design, and study of thermal power installations and the separation of gases from a gas mixture. This book presents a method for setting up an equation with which to define the state of an actual gas by means of elementary functions derived from experimental thermal data. The resultant equations are sufficiently accurate to be used for determining thermal and caloric values. Such values were determined for air, nitrogen, oxygen, and argon, and their thermodynamic characteristics data have been arranged in tabular form. Diagrams indicating the state of each substance are also given. Experimental data on the viscosity and heat conductivity of air and its components are analyzed and inferences are drawn. The authors express gratitude to A. Ye. Sheyndlin, V. I. Yepifanova and V. I. Nikolayev for

Card 1/2   UDC: 546.217

ACC NR: AM6036725

their advice. There are 65 references, 20 of which are Soviet.

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Key to the symbols used in tables I--XXI -- 5

SUB CODE: 20/   SUBM DATE: 30May66/   ORIG REF: 158/   OTH REF: 264

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S/132/60/000/012/003/004
A054/A130

AUTHORS: Pavlovskiy, V. I., Rabinovich, V. B.

TITLE: Problems in surveying rich iron ore deposits in the Kursk magnetic anomaly, in the light of the latest geophysical data

PERIODICAL: Razvedka i okhrana nedr, no. 12, 1960, 32 - 35

TEXT: In the area of the Kursk magnetic anomaly, where intensive geophysical surveying and test borings have been carried out, rich iron ore deposits have been discovered. The most thoroughly surveyed area was that of Starooskol'sk and as a result the Lebedinsk, Saltykovsk and Stoylensk deposits were found. Geophysical surveying activities have recently been restricted in this area because it is thought that there are no more worthwhile deposits. With regard to some areas this statement has been premature, however, because the geophysical survey there had not been intensive enough. Considerable zones connected to the Starooskol'sk tectonic structure have not been covered adequately by geophysical research and drilling holes at great distances from each other does not give sufficient data to characterize the geological structure of the precambric foundation. As a result of the opening of new deposits in Pogrometsk and Chernyansk, i.e., in areas which

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have previously been dismissed as being uninteresting, and because of the necessity
of plotting a detailed geological map for this industrial district, a geophysical
survey has been re-started in this area. The combined gravimetric and magnetome-
tric surveys are made for the same profile intersecting the total area surface in
a cross-wise direction to the main strike of the pre-cambric folding. In plotting
the map the section of the vertical component was taken for 100 gamma in the weak
fields, while in zones of strong anomalies it was taken for 1,000 - 10,000 gamma.
The surveys of gravitational anomalies in the Dolgopolyansk, and the magnetic anom-
alies in the Saltykovsk-Aleksandrovsk areas (having a maximum of 100 - 130,000 gam-
ma) revealed the presence of various ore deposits. In the core of the Dolgopoly-
ansk structure ferrous quartzite is found, which, in some places, in the upper
parts is completely transformed into rich ores. The same phenomenon can be observed
in the analogous geophysical character of the Luchkovsk syncline, in the Belgorodsk
area, where the ferrous quartzites are completely transformed into rich ores, at-
taining a vertical thickness of 100 - 200 m. The synclinal structure of the Dol-
gopolyansk geological area is also confirmed by recent borings (Fig. 1). In the
profile III-III of the geological survey represented in Figure 1, in the zone with
a relative minimum of anomaly, amphibolites and, in their surrounding, gneiss were
found. In the western part of the syncline (profile II-II), zone of maximum, be-
sides the ores mentioned, barren quartzites were found which were similar to those

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surrounding the ferrous quartzites in the Lebedinsk deposit (profile I-I). Weak magnetic anomalies (1,000 - 1,500 gamma) were registered in the northern part of the Starooskol'sk area, between Timsk and Yastrebovsk with bands of ferrous quartzites. Tests revealed, that crystalline slate and migmatised gneiss are present, containing ferrous quartzites. The gravimetric and magnetometric surveys, in general, show that rich iron ores are deposited in synclinal foldings and, in view of the general geological structure of the Kursk area, the whole territory should be covered thoroughly by geological survey which will most probably result in the discovery of further iron deposits. There are 2 figures.

ASSOCIATION: Kurskaya geofizicheskaya ekspeditsiya (Kursk Geophysical Expedition)

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Figure 1: Survey of the Staroos-
kol'sk geological structure syn-
clines:
1 - Timsk, 2 - Yastrebovsk, 3 -
- Ogibnyansk, 4 - Saltykovsk-
Aleksandrovsk, 5 - Korobkovsk,
6 - Lebedinsk, 7 - Stoylensk,
8 - Eastern-Stoylensk,
9 - Dolgopolyansk;
a - ores of ferrous formation,
b - ores of underlying strata
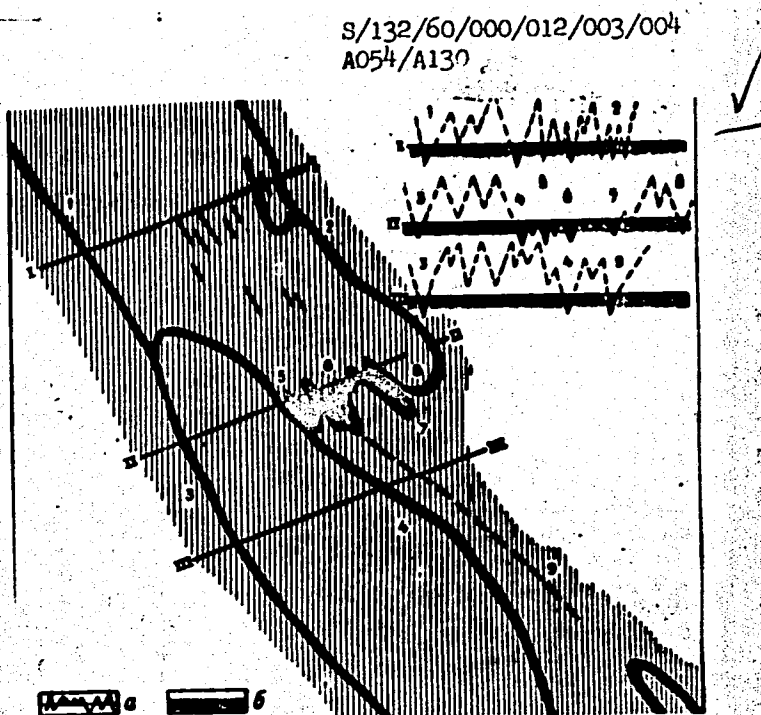
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Figure 2: Longitudinal section of the
Dolgopolyansk (A) and Saltykovsk-
-Aleksandrovsk (B) synclines:
1 - sedimentary complex, 2 - ferrous
quartzites and rich ores, 3 - crys-
talline slate, 4 - barren quartzites,
5 - amphibolites, 6 - gneiss and
migmatites

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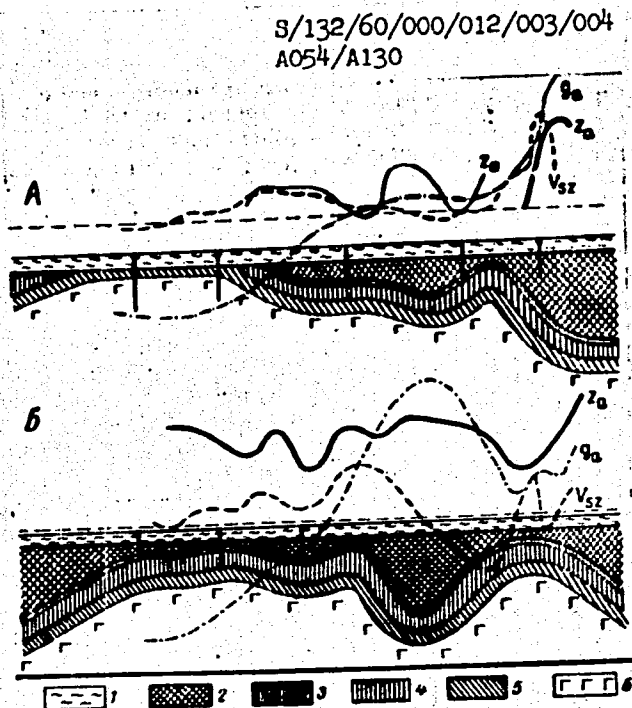
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L-6380-66

ACC NR: AP5026762   SOURCE CODE: UR/0286/65/000/017/0040/0040

INVENTOR: Rabinovich, V. B.; Blekhshteyn, L. I.

TITLE: A variable capacitor. Class 21, No. 174271 [announced by the Enterprise of the State Committee on Electronic Technology, SSSR (Predpriyatiye Gosudarstvennogo komiteta po elektronnoy tekhnike SSSR)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 40

TOPIC TAGS: variable capacitor, electronic component

ABSTRACT: This Author's Certificate introduces a variable capacitor with a fixed plate fastened to a base and separated by a layer of solid dielectric material from a rectangular or round plate bent in the arc of a circle. This plate is movable and is equipped with a support disc. The opposite edges of the movable plate are pressed to one side of the support disc, and the adjustment mechanism for tuning the capacitor is pressed to the other side. The engagement factor is increased by placing an insulating washer between the layer of solid dielectric material and the central section of the movable plate. The movable plate has an elastic insert (e.g. rubber) with a layer of foil on one side and an elastic metal plate fastened to the other side.

SUB CODE: EC/   SUBM DATE: 10Aug64/   ORIG REF: 000/   OTH REF: 000

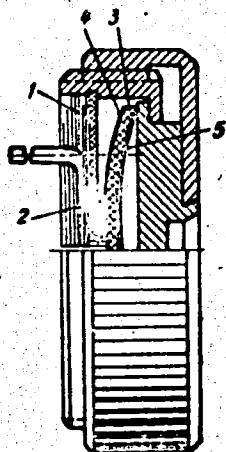UDC: 621.319.43

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L 6380-66

ACC NR: AP5026762

Fig. 1.   1--solid dielectric layer; 2---washer; 3--rubber insert; 4--foil layer; 5--metal plate

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S/128/61/000/001/004/009
A054/A133

AUTHORS: Kletskin, G. I.; Sobol', N. L.; D'yakonov, V. Ye.;
             Rabinovich, V. D., and Van Zhu-Yao .

TITLE: Study of processes in cupola furnaces in which part of the coke
             is replaced by natural gas

PERIODICAL: Liteynoye proizvodstvo, no. 1, 1961, 19-25

TEXT: Although several Soviet plants use natural gas for firing fur-
naces, there is still a number of problems connected with the replacement
of coke by gas. In cooperation with the Mosgazoproyekt Institute the Stan-
kolit Plant put a coke-gas fired 10 - 12 t/h capacity cupola furnace into
service last year, which is equipped for tests. As to the design of gas-
fired furnaces, the general opinion is that when fired only by natural gas,
the cupola design must be changed radically and should be given a shape re-
sembling a shaft or air furnace. When both coke and gas are applied, how-
ever, its design has to undergo only slight modifications and, if necessary,
the furnace can be fired by coke only. Special features of the furnace con-
verted for coke and gas firing (Fig. 1) are the two collectors which feed

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air to the tuyères and the burners, respectively. The tuyères are moreover arranged only in one row in connection with the considerably reduced amounts of coke and air used. In order to establish the optimum height of the burner assembly, twelve burners were mounted in the test-cupola in three rows, the first at a height of 770, the second at 1,070 and the third at 1,370 mm from the axis of tuyères. At the simultaneous combustion of gas and coke the regulation and distribution of the blast between tuyères and burners is very important. With the collectors (4, 5 in Fig. 1) which operate in combination with independent fans, the required constant gas-coke ratio in the cupola can be set and maintained. Complete burning of the gas outside the shaft is obtained by a special tunnel-antechamber for the discharge of the gas-air mixture from the burners. The most suitable burner for cupolas fired with mixed fuels is the double-circuit type, in which the gas and the air can be pre-mixed and the outlet cross section is such that the speed of the outflowing air-gas mixture is more than 40 - 50 m/sec. During smelting in the cupola furnace the parameters of gas and air consumption for tuyères and burners change constantly. The control panel (Fig. 4) has push buttons controlling the slidevalve mechanisms (16, Fig. 4), the push button for stopping the cupola operation in case of danger (17, Fig. 4), a button for au-

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dible and one for light signals (18, 20, Fig. 4), a safety-release button
(19, Fig. 4). In order to maintain a constant gas pressure before the bur-
ners and to ensure the combustion of gas at a given ratio to air, two jet-
regulators from the Khar'kovskiy zavod Teploavtomat (Khar'kov Teploavtomat
Plant) are mounted, one controlling the gas pressure (8, Fig. 4), the other
the gas-air ratio (9, Fig. 4). The controlling pulse is given to the pres-
sure regulator when the gas pressure before the burners attains 0.27 atmo-
spheres. The change in pressure before the burners is compensated by a valve
(operated by a CK-80-15 = SK-80-15 servo-motor), moving before the burners
in the required direction to equalize the gas pressure. The gas-air ratio
regulator receives pulses of pressure drops from a diaphragm which controls
the gas and air consumption (differential type ДПЗМ (DPEM) pressure gauge).
Air consumption of the tuyeres and burners is controlled by an Э-610 (E-610),
gas consumption by an Э-612 (E-612) device. In order to prevent gas-explo-
sions, a ПК-100 (PK-100) safety valve, designed by the Mosgazproyekt, is
mounted in the gas conduit; it is equipped with an electromagnet whose head
is connected to the air-collector of the burners through a pulse pipe. When
the air-pressure drops below a certain value, the gas supply is switched off
automatically. When the gas pressure drops below 0.15 atm, the СПАС-1.5

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(SPDS-1.5) gas-pressure indicator (12, Fig. 4), starts operating and the gas-supply is stopped. The operation of all these devices is signaled by a flashlight (20) and a howler (13). The air-collectors are provided with valves to prevent their destruction in case of explosion. The smelting process, the quality of metal smelted in a mixed-fuel cupola and the composition of the combustion products were studied with various rows of burners (I, II, III) and also with different combinations, respectively: at the same time I-II, II-III, I-III and all three. The other conditions of the process (composition of the charge, for $C4$ 24-44 (SCh 24-44)iron, firing conditions and temperature, etc.) were identical in all tests. It was found that by charging 100 kg coke and 30 m^3 gas into the furnace for 1 ton iron, 875,000 kcal heat was introduced, as against 992,000 kcal of heat used for the same amount of iron in furnaces fired by coke only. This can be explained by the fact that less heat is spent on slag formation due to the decrease in the amount of flux applied and to the improvement of heat transfer to the charge in the cupola furnaces, partly fired by gas. An analysis of the gas composition in coke-fired and coke-gas fired cupolas showed that the CO_2/CO ratio is higher in the latter type of furnaces. It was found that by mounting the burners higher in the furnace shaft the CO_2 content of furnace

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gases increases while the CO content decreases. The hydrogen content also
increases in furnaces with mixed fuels (it is 2 - 2.5 %, three times more
than when firing with coke alone). The higher the burners are placed, the
higher the hydrogen content. Figure 7 presents the temperature conditions
of mixed-fuel cupolas and shows that they are 150 - 300°C higher than those
in coke fired furnaces. At a level of 3 m from the tuyère the temperature
of separating gases attains 950°C in the coke-gas furnace, (when row I of
burners is operating), while the corresponding temperature for coke-fired
furnaces is 650 - 700°C. Thus, the smelting of the metal charge begins at
higher levels in the coke-gas fired furnace. As to the behavior of carbon,
silicum and magnesium, no change is found in iron smelted in mixed-fuel cu-
polas, while the sulphur content decreases by 0.01 - 0.02 %. When the bur-
ners of the upper row are used, iron shows an increased tendency to form ce-
mentite and shrinkage cavities, while its fluidity seems to decrease. More-
over, iron produced in mixed-fuel furnaces has a higher hardness (by 10 - 15
Brinell grades) while the mechanical properties do not change. The lining
of mixed-fuel furnaces requires more frequent repairs since it burns higher
up. The coating consists of 35 % sand, 25 % refractory clay and 40 % waste
of fireclay bricks. Especially the coating of gas-burner tunnels has to be

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in perfect condition, because the regularity of the goemetrical form of the tunnel greatly affects the intensity of gas combustion. Coating with fire-clay blocks was too expensive, a refractory mass is therefore used. The o-peration conditions of the mixed-fuel cupola are given in Table 6. The coke bed is 1,400 mm high. When the normal operation conditions are attain-ed, further operation is controlled automatically. The experience of 14 months of operation has shown that the mixed-fuel cupola works satisfactori-ly with 10 % coke for 300 nm^3/hour gas at an air consumption of 5,000 nm^3/hour, producing 10 tons of iron per hour at a temperature of 1,430°C in the chute. The output of the mixed-fuel cupola is increased by 20 - 25 % as compared with coke-fired cupolas. There are 6 tables and 13 figures.
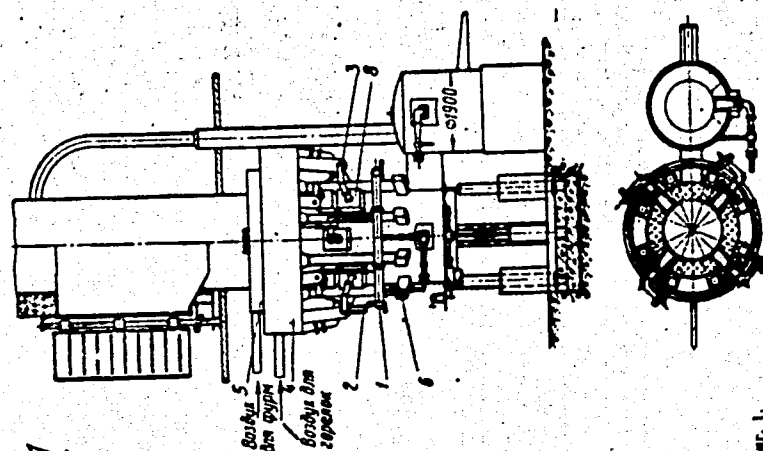
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Figure 1:

Fig. 1

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Study of processes in cupola furnaces...

Figure 1: (continued)

Mixed-fuel cupola furnace

1 - collector;
2 - stand pipe;
3 - burner;
4, 5 - air collectors;
6 - tuyère;
7 - tunnel;
8 - rectangular-section container.

Horizontal legend: 1 - Air for tuyères
                   2 - Air for burners

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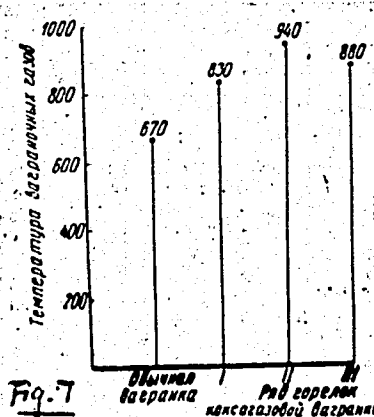A054/A133

Fig.7

Figure 7:

Temperature of furnace gases

Horizontal legend:
Conventional cupola, I-II-III row of burners in the coke-gas fired cupola

Vertical legend:
Temperature of furnace gases

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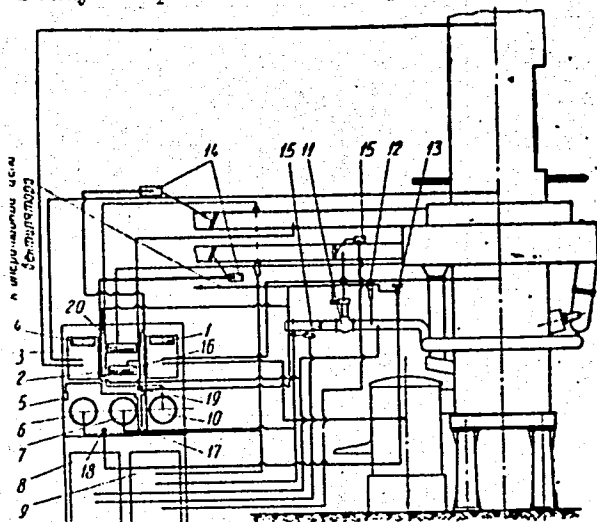S/128/61/000/001/004/009
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Fig. 4

Figure 4:
Control devices and automatic system
of the coke-gas fired furnace
1 - millivoltmeter; 2,3 - diaphragm pres-
sure gauge; 4 - millivoltmeter; 5 -
(not given); 6, 10 - air consumption
gauge; 7 - gasometer; 8, 9 - auto-
matic jet regulators; 11 - safety
valve; 12 - contacts indicating the
gas pressure drop; 13 - howler;
14 - operating mechanism; 15 - ser-
vomotor, 16 - mechanism of slide
valves; 17 - push button for stop-
ping furnace operation; 18 - sound
signal; 19 - safety switch off de-
vice; 20 - lamp.

Vertical legend: to the power line of fan

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Table 1: Technical characteristics of the test cupola

Designation	Specification
Internal diameter of the furnace shaft	1,300 mm
Number of tuyère rows	1
Number of tuyeres in the row	8
Ratio of tuyère-section surface to the surface of shaft section	10 %
Number of burner rows	3
Total number of burners	12
Distance between bottom and tuyère axis	850 mm
Distance between the tuyère axis and the lowest row of burners	770 mm
Distance between the burner rows	300 mm
Distance between the upper edge of tuyères and the sill of charging door	3,935 mm
Forehearth-internal diameter	1,100 mm

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Table 6: Operation conditions of cupola fired with coke and gas

Time from the beginning of furnace operation, min	Air in the tuyere		Air in the burner		Gas	
	Pressure mm water column	Consumption m^3/h	Pressure mm water column	Consumption m^3/h	Pressure mm water col	Consumption m^3/h
0 - 20	250-300	2,500	–	–	–	–
20 - 30	500-600	3,500	900-1,000	3,000	2,700	300
30 and more	700-800	5,000	950-1,050	3,000	2,700	300

The pressure should be raised until the pointer of the gage does not move from 0.

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